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LOUISIANA conservationist

may—june, 1971

comments

It takes two to speak the truth — one to speak, and another to hear.
Henry David Thoreau

It seems appropriate to me at this time to call to the attention of hunters, conservation clubs, Police Juries, and Legislators that the annual public meeting on seasons and bag limits has been set for June 18 and 19 at the Ramada Inn in Alexandria.

There are many hunters in Louisiana who feel that they have little to say about the setting of the hunting seasons and establishment of bag and possession limits. Not too many years ago, the Commission was sometimes subject to sharp criticism concerning seasons and bag limits that it established. In recent years, there has been little or no widespread complaint about seasons, other than duck hunting seasons and bag limits.

In reality the Commission merely exercises a regulated prerogative when it establishes the season on migratory birds, including waterfowl. The actual number of shooting days, bag and possession limits, and other regulations pertaining to the seasons for migratory birds are fixed by the Interior Department's Bureau of Sport Fisheries and Wildlife. The Commission is granted a framework of dates from which the hunting season can be selected. This is the only authority granted to the Commission as far as migratory birds are concerned.

These public hearings provide an opportunity for sportsmen and representatives of organized sportsmen's groups, along with Police Jury members and Legislators throughout the state to appear before the Commission and express their views regarding hunting seasons and bag limits on resident game, as well as their preference for dates of seasons within the frameworks for migratory species such as waterfowl, doves, woodcock, rails and snipe.

As has been the custom for many years, the public hearings will follow immediately after the Commission's regular monthly public meeting, which will also be held at the Ramada Inn on Friday morning, June 18, starting at 10:00 A.M.

This is an opportunity for hunters, in particular, to testify before the Commission and speak freely about seasons and other hunting regulations. The statements are tape-recorded and the transcript of the meeting is carefully reviewed by the Commission and its staff biologists before actual setting of hunting seasons takes place.

It is customary to hold these hearings in Alexandria because of that city's central location, and a Saturday is always included so that persons who might not be able to attend on Friday can appear before the Commission and make their views known.

The importance of the public hearings cannot be overstressed. They provide individuals with an opportunity to express either their own views, or those of organizations. Statements are not limited in length and on many occasions Commission members are able to comment on issues that are brought up, often clearing up misunderstandings that may exist.

In short, the Alexandria annual public hearings represent a forum where any facet of the fixing of hunting seasons and bag limits may be discussed or commented upon. The Commission puts itself at the disposal of individuals and groups, and the hearings continue as long as there are persons present to be heard.

I have always had a strong conviction that every sincere hunter, interested keenly in his sport, has definite ideas about hunting seasons and the annual harvest of game birds and animals. If this were not so, we would not have an abundance of game in these days of exploding human population and increased demands for recreational opportunity in the form of hunting.

Contrary to the beliefs of some people, hunters are among the foremost conservationists one can expect to encounter. While convinced that game and other forms of wildlife are renewable resources, they would be the last to let any species become endangered, or over hunted.

The public hearings at Alexandria offer opportunity for these persons to be heard. What they contribute in the way of opinions and firm beliefs can be of great significance in the management of wildlife resources in the state. I urge both individuals and organized groups to be represented in Alexandria during the public hearings in June.

LOUISIANA conservationist

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COVER—First successful nesting of Brown Pelicans in Louisiana in 11 years—Photograph by Allan Ensminger

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I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country—its soil and minerals, its forests, waters and wildlife.

The Louisiana Conservationist received two awards for excellence from the International Association of Business Communicators District II at the annual conference in Athens, Georgia. It was named Best Overall Magazine and Best Nonprofit Organization's Magazine.

EACH YEAR Louisiana estuarine lakes, bays and lagoons yield hundreds of thousands of barrels of oysters. These oysters are the basis of a multimillion dollar industry for the state. From the scientist to the fisherman, from the grocer to the restauranteur, the oyster industry's story is a story of people, people who depend on that innocuous bivalve, the Louisiana oyster.

Let us look first at the single, most important factor in the industry, the oyster itself.

When the water temperature in Louisiana begins to rise rapidly between May and June, the life of a new born oyster begins. Spawning activity is at its peak at this time, although spawning will occur throughout the summer and fall.

When a female oyster is stimulated by a change in water temperature or by the presence of the male sperm, she releases millions of microscopic eggs into the water which are then fertilized. An oyster larvae hatches a few hours after this fertilization process. It takes from two to four weeks after hatching for the larvae to develop through its many initial stages. During this time the larvae swims about feed-

the LOUISIANA OYSTER

LIONEL W. TREADAWAY

ing on tiny plant life and microorganisms. It is also during this stage that most larvae fall prey to larger animals. Some perish because of numerous other environmental factors. A small percentage of the larvae survive; become attached to objects in the water, and begin to grow shells. This process is called spatfall or setting.

From the time the young oyster sets until it reaches a size of one inch, it is called a "spat". During the setting process the oysters can cement themselves to almost any clean material found in the water. Within a few days after attaching themselves, young oysters can be seen without the aid of a microscope.

After a spat has attached itself to an object, which is usually oyster or clam shells, it remains stationary. The oyster now filter feeds itself on tiny plants and animal life, by pumping water in one side of its shell, filtering and retaining the food from the water, and finally pumping the water out the other side at a rate of approximately three gallons per hour.

When the spat reaches the one inch size, it becomes a seed oyster and remains so until it reaches a size of three inches. Upon reaching the three inch size the oyster becomes marketable stock and may be legally har-

Editor's Note—The third annual Louisiana Oyster Festival is scheduled for August 13, 14 and 15 in Galliano. Included in the three days of entertainment will be such events as an Oyster Eating Contest, the Oyster Shucking Contest, the Coronation of the King and Queen, the Ball, and educational displays pertaining to the Louisiana oyster industry.

PHOTO BY LIONEL W TREADAWAY 1.

2. PHOTO BY LLOYD POISSENOT

3. PHOTO BY LLOYD POISSENOT

vested for sale in Louisiana.

In Louisiana an oyster may go from spat to marketable stock in a period ranging from five months to two years. Among the factors which decide this are current, which brings food to the oyster; salinity, which determines the amount of food to be found in waters of high salt content as opposed to that found in waters of low salt content; and finally the pattern of growth of the bed, which can be hampered by overcrowding.

After an oyster has "set", it still has a very slim chance of survival. Approximately only one percent of all oysters that set ever survive to maturity. Disease and predators take a heavy toll of the young oysters.

Oysters are abundant in coastal zones called estuaries, where there is a mixture of fresh and salt waters. They are usually found collected in groups called oyster reefs, beds, or bottoms. The factors which usually determine the location and extent of the beds are current, salinity, type of water bottom, and various other environmental factors.

While oysters can live in varying degrees of salinity, they fare best when the salt content is between 0.5 and 3.0 percent. If the water becomes too fresh, their growth and other body functions are restricted and they may eventually die. If, on the other hand the water becomes too salty, predators and disease may overrun the bed.

OPPOSITE PAGE: 1. After being loaded on waiting trucks the oysters are transported to local restaurants. 2. Sack oysters must be individually culled by hand. 3. During the return trip the oysters are put into 1½ bushel sacks.

As in any other venture, the oyster fisherman or farmer must contend with forces bent on destroying his crop.

Number one on the oyster farmer's "unwanted list", is the conch or oyster drill. As a worm bores into a vegetable, the drill attaches itself to the oyster and bores a smooth round hole through the shell and extracts the meat. Through research, it has been found that the drill cannot live and reproduce in water with a salinity less than 1.5 percent. For this reason seed beds are placed in areas of low salinity.

The salt water drum fish also causes expensive losses in bedding grounds by crushing the oyster shells and eating the meat. A single large school of these predators have been known to completely destroy a bedding ground in a single night. Like the farmer trying to keep the cows out of his field, the oyster fisherman must surround his crop with a fence of galvanized wire mesh, strong enough to repel these powerful fish.

In the late 1940's another enemy of the oyster was noted, Dermocystidium marinum, called D. marinum for short, a water-borne parasitic oyster fungus, which resulted in high summer mortalities among oysters. Because of this pest, fishermen were forced to bed their crops between September and Nobember and harvest them by the coming June. Prior to this time oysters had been bedded in March, April and May and left to grow for up to two years. Research done on D. marinum by the Louisiana Wild Life and Fisheries Commission showed that to function, the fungus had to be in water with a salinity of 2 percent or more. This simply meant that oysters kept in areas with less than 2 percent salt content would be safe from this pest.

The group responsible for this research was the Division of Oysters, Water Bottoms, and Seafoods of the Louisiana Wild Life and Fisheries Commission. The Oyster division has a multitude of roles in the state's oyster industry. Among its many duties is management of state-owned natural seed grounds encompassing approximately 650,000 acres lying east of the Mississippi River. Eighty percent of that portion of the oyster crop situated between the Mississippi and Atchafalaya rivers is entirely dependent upon oysters obtained from this state owned seed ground.

Staff personnel of the division are constantly conducting research programs aimed at improving the production and quality of the state's oyster crop. These programs run the gamut from disease and predator control to technical aid offered to individual oyster growers. Upon request, division staff members investigate and, if possible, offer solutions to problems encountered on individual oyster leases. The oyster division also handles the leasing of bedding grounds to the fishermen at the price of $1 per acre per year.

If any one group of people had to be singled out as the backbone of the oyster industry, it would have to be the oyster fisherman himself. His experience in oyster growing was not come by easily. In most cases it has been handed down for five or more generations, just as the oyster leases themselves are handed down from father to son. The type of experience needed to show a profit in the oyster business is not something learned from books, but by back-breaking work in weather that is not known for its desirability. Rain or shine, cold or heat, seven days a week, 365 days a year, the oyster fisherman works his reefs.

Not only is the work extremely hard and the hours long, but the initial investment which has to be made can be very costly. When one realizes the cost of leases, application fees, surveys, and highest of all, specially designed boats and equipment, to the layman the prospect of becoming an oyster grower becomes more and more remote.

Oyster farming is an ancient art, with records dating back as far as Roman times. Horace, Cicero, Seneca, Pliny, and other venerable historians have mentioned oysters in their writings. It is a known fact that the Romans settled near oyster producing areas in England and it is not at all improbable to assume that these locations were chosen because of the availability of oysters.

As early as 78 B.C. writings show that oysters were transported to Rome for feasts and banquets in bags which were tightly packed with snow and ice.

The Roman historian Pliny wrote that one Sergius Orata introduced the artificial cultivation of oysters, in beds, near Rome, about 95 B.C., and lauded the delicious flavor of the oysters found in Lake Lucrinus.

Today the Louisiana oyster fisherman still performs the same basic operation used by the Romans. The differences which time has made can be readily seen in the type of equipment used in planting, cultivating, and harvesting. The difference in techniques which are being used today is evidently a direct result of the research which has gone into making the Louisiana oyster, famous throughout the world.

Let's look for a moment at the steps which must be taken to put oysters on the table, or in the processing plant.

The oyster fisherman must first secure a lease on suitable water bottoms from the Louisiana Wild Life and Fisheries Commission. If this lease does not have an existing natural reef already on it, the fisherman must buy shells to create the hard bottom which oysters must have to survive.

The shells must be loaded on the fisherman's lugger, a specially designed craft with a wide deck, high sides and a shallow draft. The high sides of the oyster lugger keep the oysters from falling off the deck in rough water. The purpose of the wide deck is to permit vast quantities of oysters to be transported. With its shallow draft the lugger can maneuver in water that would be too shallow for other boats one-half its size.

The next step is to evenly scatter the shells on the lease for maximum catches of spat and to prevent overcrowding or clustering. Once the lugger has deposited its reef shells, which is usually done prior to the peak spawning season in May, the oyster fisherman turns his efforts to gathering seed oysters for the bed. These seed oysters can be taken from the state owned seed beds at any time between September 1, and May 19. The beds are closed by law from May 20, through August 31, to allow the oysters to spawn during their peak season. Should the fisherman wish to harvest seed oysters during the closed season he must have a private

4. Empty shells carefully scattered are the foundation of the oyster bed.

OPPOSITE PAGE: 5. Oysters are brought up from the water bottoms by specially designed oyster dredges. 6. Dredging and culling aboard a lugger goes on from dawn until dusk. 7. The incomparable Louisiana oyster.

PHOTO BY LLOYD POISSENOT

4.

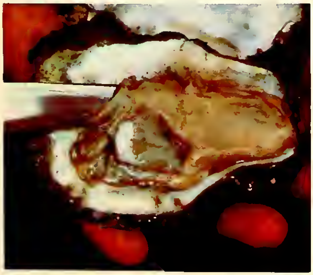
bed of his own.

After the lugger has been loaded with seed oysters, the trip back to the bedding ground is begun. The young oysters are then scattered by hand over the lease, an art in itself to see the precise way in which the shovels so evenly distribute the seed.

The young oysters are then left to grow on the bed for as long as ten months. This bed is usually located in water with a low salt content which normally produces a faster rate of growth than high salinity water.

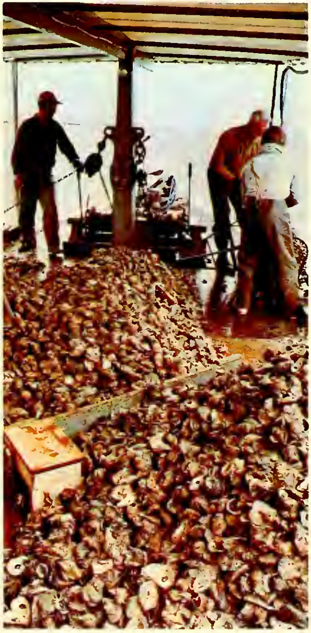
After the ten month period is over the fisherman will sometimes move his oysters to a different bed where the salinity is much higher. As the oysters are dredged from the first bed for this replanting process, they are carefully culled by the fisherman and then separated as to size. The larger oysters are piled on the lugger's deck, while the smaller oysters, under three inches, are thrown overboard and rebedded.

Loaded once again, the lugger sets out for the new bedding ground. After being carefully scattered over this new bed, the oysters are allowed to remain from a week to several months, depending on salinity. It is on this final bed that the Louisiana oyster obtains that delicious flavor and salty taste for which it is famous.


7. PHOTO BY LLOYD POISSENOT

5. PHOTO BY LIONEL W. TREADAWAY

6. PHOTO BY LLOYD POISSENOT



The final dredging for these oysters now begins. They are carefully hand-picked and measured into a metal basket which holds one and one-half bushels. From the basket they are transferred to the familiar burlap oyster sack, which is tagged with the fisherman's permit number, date, and location of bedding ground. The sacks are then stacked on deck and the homeward trip toward the wharf begins.

The luggers are met at the docks by transport trucks. As the boats tie up, conveyor belts are pushed into place. This signals the final part of the operation, placing the oyster laden sacks on the belts and finally onto the waiting trucks. It is merely a matter of hours before the sacks are unloaded at oyster counters and restaurants throughout the area.

Oysters which are consigned to shucking shops and processing plants, which ship throughout the United States, are handled somewhat differently. As the boats dredge the oyster, they are shoveled into a pile on the deck. Once the lugger has a full load they are brought to the factory. The unsacked oysters are shoveled from the deck to conveyor belts which bring the oysters into the shops for shucking by hand or into huge hoppers for steaming. The shells are opened, the meats removed, washed and packed into jars or cans and shipped by refrigerated vehicles. It is at this point that grocers and restaurant owners become a part of the oyster industry.

The cry of "Gimme a dozen on the half-shell' or "One oyster loaf", resounds and here they are, deliciously large and fat—the incomparable Louisiana oyster.

THE RETURN OF THE BROWN PELICAN

TED JOANEN AND DAVIDSON A. NEAL

A SMALL NESTING COLONY of Brown pelicans has been reported this spring along the Louisiana coast for the first time since 1961! All birds in this flock were also reported to be carrying small white cloth bands attached to their wings. Thirteen nests containing 20 eggs were located on a small shell island in Barataria Bay near the Commission-owned research laboratory at Grand Terre. These birds were a result of the restocking program carried on by the Refuge Division of the Louisiana Wild Life and Fisheries Commission each year since 1968.

In early spring of 1968, representatives of various state game departments, Bureau of Sport Fisheries and Wildlife, the National Audubon Society, and a number of private organizations met at the Commission-owned Rockefeller Wildlife Refuge to determine the past and present population trends of Brown pelicans and to investigate the possibility of re-establishing a resident colony once again in Louisiana.

Populations of Brown pelicans declined drastically in North America during the 1960's. Louisiana recorded its last nesting attempt back in 1961. Also, Texas reported only two nesting attempts in 1968 where hundreds nested before. As an outgrowth of the meeting held at Rockefeller Wildlife Refuge, plans were made to ship 50 fledgling pelicans from Florida for release in Louisiana.

That year, personnel of the Refuge Division of the Louisiana Wild Life and Fisheries Commission, with the aid of the Florida Game and Freshwater Fish Commission, obtained 50 young fledgling pelicans from Coco, Florida. The birds were trucked to the Rocke-

PHOTO BY ALLEN ENSMINGER

2.

3.

PHOTOS BY LLOYD POISSENOT

Opposite Page—1. Aerial view of narrow shell shoal where pelicans nested. At normal high tide there was only one foot elevation for the nesting birds.

2. With excellent chances of survival following the precarious hatching on the shell shoal, two young pelicans contemplate their new home.

3. A mother pelican carefully watches over fledglings in nest.

feller Refuge at Grand Chenier and released in two covered flying pens.

Diets and methods of handling were worked out and the birds were later released at the Grand Terre Marine Research Laboratory and also at the Rockefeller Refuge. Both areas had once supported large flocks of pelicans and the beaches, surrounding marshes and bay areas of Grand Terre Island provided ideal nesting habitat. Each bird was banded with a U.S. Fish and Wildlife Service leg band and also a white patagial wing streamer for identification in the field.

Plans for the captive flock were two-fold. First, the Louisiana Wild Life and Fisheries Commission wanted to investigate the possibilities of establishing a captive population of pelicans that would be available for experimental purposes; second, direct releases of young birds were planned.

The first release was made in September, 1968, with 25 banded birds set free on Grand Terre. In October, 1968, a release of 21 birds was made at Rockefeller.

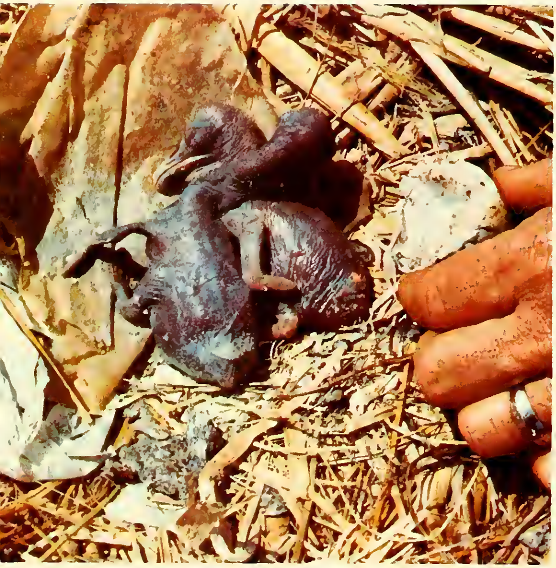
The birds quickly dispersed over Grand Terre Island, returning each day to feed on the food made available by the personnel at the Laboratory. In July of 1969, 25 additional fledgling pelicans were released at Grand Terre, and after several weeks all were flying and had joined with the other birds.

The 1968 release at Rockefeller Refuge did not fare out so well; however, the pelicans falling victim to a mysterious die-off. Sick and dying pelicans were noticed on the feeding sites in late March and were immediately taken to the Veterinary Science Department at LSU for post-mortem examination; all dead birds were also analyzed at LSU's Feed and Fertilizer Laboratory for possible chlorinated hydrocarbon insecticide residue.

The results of the analysis from the Veterinary Science Department indicated little which seemed to be of major significance, although the birds were emaciated and showed the presence of ascarid endoparasites (round worms found in the intestinal tract). Occurrence of this parasite was believed to be relatively normal.

The insecticide residue analysis; however, proved to be another story. Relatively high concentrations of chlorinated hydrocarbons were found in tissues of the brain and liver of all birds analyzed from the Rockefeller release. According to the findings the tissue samples contained quantities of DDT, DDD,

4. PHOTO BY McFADDEN DUFFY



5. PHOTO BY LLOYD POISSENOT

6. PHOTO BY LLOYD POISSENOT

DDE, dieldrin and endrin.

The samples taken at Grand Terre, where the pelican colony continued to thrive, were relatively clean of insecticide content. The die-off at Rockefeller Refuge was spread over a period of approximately a month, indicating that disease, which would have resulted in a spontaneous die-off, was not the culprit.

A possible explanation of this situation was that the Brown pelican picked up insecticide residues over an extended period of time and stored them in fatty tissues of their bodies (which some birds—apparently pelicans among them—have the ability to do). When the birds are put under stress, stored fat is metabolized into energy and during the process pesticide residues are circulated to other organs of the body. During this period of stress, if there is enough organochlorine residue in fatty tissue it will cause mortality. The intake of stored fat, on the other hand, would have been different for each bird, resulting in a staggered death toll.

One hundred additional birds were obtained in 1970; however, all were released at the Grand Terre Lab. This brought the total to 150 birds released at Grand Terre over a three-year period. A very close check was kept on these birds by the personnel at the laboratory and periodic aerial inventories were made throughout the year. Also, information on mortality and plumage sequence were made.

Nesting was first reported in March of this year by the personnel of the Marine Laboratory. Pelicans are known to nest either in the small, low mangrove bushes or on the ground. These birds chose a ground nesting site and constructed their nests on a small shell reef extending into Barataria Bay. Here the nests were built with loosely constructed mangrove sticks and also oyster grass. Anywhere from one to three eggs were present in each nest.

Incubation was started as soon as the first egg was laid. This would explain the variance in size of the young in the nest. The eggs appeared dull, dirty-white, heavily nest stained and appeared to have a rough surface. At the time of this writing, there are 11 young present with several eggs remaining to be hatched. When the young first hatched, they were far from attractive, looking more like shape-

Opposite Page—4. Close up of newly hatched pelicans. Egg shells were carefully gathered and rushed to laboratories for analysis to determine possible presence of pesticides. 5. Average pelican nest contained two eggs. 6. A nesting pelican.

7. Commission personnel are shown banding pelicans imported in 1968 from Florida. Wing streamers were also attached to help proper identification of the age of birds. 8. The small colony of nesting pelicans are shown on the shell reef they selected to build their nests and lay their eggs. 9. A close up of nesting pelicans.

7. PHOTO BY TED JOANEN

8. PHOTO BY McFADDEN DUFFY

9. PHOTO BY LLOYD POISSENOT

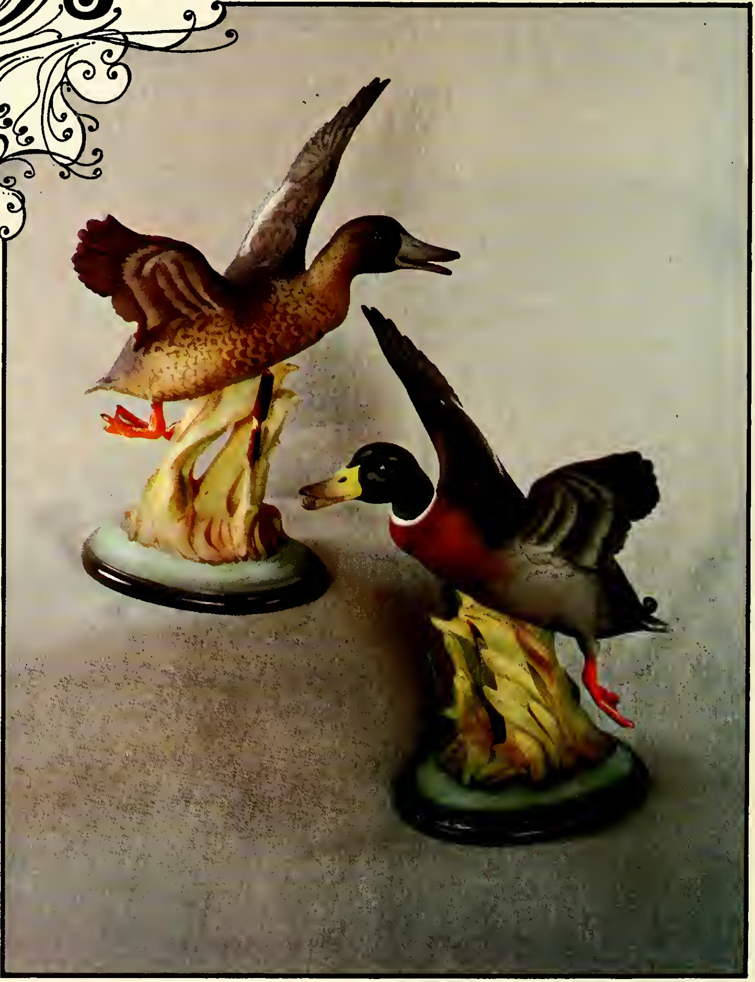
less masses of red meat. They appear quite helpless in the early weeks of life; however, within a few weeks begin to take shape and become quite active. Their reddish color seems to disappear within a few weeks, taking the appearance of dark black to purple. In approximately three to four weeks down begins to appear, usually on the wings and the back, head and neck.

The young birds have been found to grow very rapidly and are three times the size within about a three-week period. At this stage they begin walking very clumsily throughout the nesting colony causing great confusion and frustration among the parent birds. It was interesting to note that nest construction continued throughout the incubation and rearing of the young. At the onset of the laying period, nests were composed of loosely gathered sticks and marsh grasses. As the young began to hatch, nest measurements indicated they had doubled in size and height. Both the male and female seemed to tend nest and assist with the incubating chores. From all indications, the food consists entirely of fish. Both parents also assist in caring for the young.

What security the environment along the Louisiana coast will offer these birds in the future remains to be seen. However, a very close monitoring system has been set up in order to follow certain aspects of the biology, parasites, diseases, and also pesticide residue in the Brown pelican. Eggs that produced young this year have been retrieved and measured for egg shell thickness. It already has been proven that thickness of the shell decreases with increasing amounts of DDE residue (a metabolite of DDT).

The inquiry into the fate of Louisiana's Brown pelican population is still in its infancy, and only general assumptions can be drawn; however, the preliminary results help to shed new light on some of the causative agents of the demise of the Brown pelican along the Louisiana coast. From the result of these studies and other studies conducted by researchers throughout the country, it is hoped that enough knowledge will be gained to insure this situation never develops again and it may also serve as an indication of what could happen to Louisiana's other wildlife forms.

Of Clay & Fire...



conservation in ceramics

McFADDEN DUFFY

MALLARDS, Limited Edition of 500 Replicas

Photographs courtesy of the complete collection of Coleman E. Adler & Sons, Inc., New Orleans

This is a story of a man and his art. It is intended as a tribute to an artist who mastered in two short decades the techniques and procedures necessary to produce true porcelain. This in itself was a major accomplishment for a person who had no formal training in the making of ceramics, but today his works are found in Louisiana homes and museums.

Add to this self-taught ancient trade a creative, artistic drive coupled with deep insight and true appreciation for beauty in nature's creations and one comes up with the profile of a man exceptionally gifted; yet a man for whom it was destined that the sands would run out too soon, leaving the world of art with only a portion of what might have been one of its most generous and lasting heritages.

There are those who say that the late Edward Marshall Boehm was "the Audubon of porcelain" and that had he not died prematurely in January of 1969, at the peak of his creative powers, he would have surpassed in three-dimension porcelain what John J. Audubon had done in two-dimension art.

While there are some devotees of Audubon who might dispute this comparison, it could not be challenged in the sort of true, detached, clinical critique observed whenever two great artists are compared.

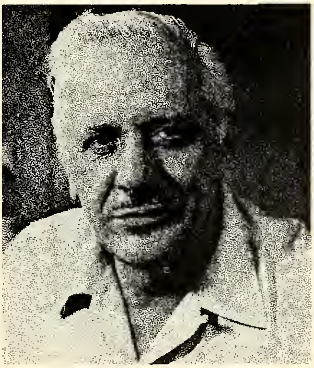
Among the collectors of Boehm's porcelain ceramics, ranging from presidents, royalty and affluent individuals to the world's leading museums of natural and fine arts, there is little doubt today that at the start of Edward Marshall Boehm's second decade of creativeness the character of the porcelain collection he produced was continuing to show rapid change.

As his works progressed a majority of non-bird subjects had been discontinued or closed out. The creative forces surging within the ceramist began to chart the course of his latter years.

Boehm started avoiding private commissions and requests from firms in search of fine promotional pieces of porcelain. He began programming his future. His goal was to devote full activity to the birds of America, as did Audubon in two-dimension. Later, he planned to do the birds of the world—rare subjects that perhaps someday would be extinct. Perhaps it was a similar destiny that guided some of the world's other great artists.

He began to devote a great part of his time to his garden-aviary complex. This combination of birds, flowers and vegetation represented the finest of Boehm's work. Today, these objects are the ones most deeply prized by collectors and museums.

But the story of Edward Marshall Boehm is more than a story of almost priceless porcelains. It is fundamentally the story of a man who was endowed with unique talents. He was a sculptor, gifted painter, and architect; for it took all of these skills to fashion creative combinations of wildlife in natural settings and fuse them in kilns at approximately 2400° F. Stoneware is virtually the same basic material, only flint is added and it is fired at 2000° to 2400°F.



EDWARD MARSHALL BOEHM

Porcelain is a translucent composition made from a combination of vitrifying materials with clay, which is exposed to high temperatures. It is necessary for a few brief sentences about the texture or finish of ceramics because Boehm found texture to be important in his sensitive works. Fired ware can be finished with a glaze or enamel ; but without either it is called bisque.

Glazing, the glass-like coating which renders a body impervious to liquids and helps to protect brittle ceramics from scratching or chipping, no longer interested Boehm; except as needed to increase the effects of realism in pieces such as the grapes in his Cardinals, or the holly berries in the Black-capped Chicadees.

The bisque that Boehm turned to for his works may be white or it may be colored. Its most popular uses are for reproductions of statuary or subjects that do not have a shiny or glazed look. With birds, flowers and vegetation, Boehm found that bisque with color allowed him to depict the creatures and colors of nature with a fidelity that made them seem almost alive. That the subjects were done in porcelain brought the ceramic art to its highest plane.

TRUE PORCELAIN is called hard-paste and it comes as a surprise to most people to learn that the Chinese formulated a hard-paste during the Han Dynasty, fifteen to seventeen centuries before Europeans. The skills required to produce fine porcelain—skills that took Europeans centuries to discover—were mastered by Edward Marshall Boehm in a single decade in Trenton.

In his book on Boehm, Frank J. Cosentino, President of Edward Marshall Boehm, Incorporated, termed this one of the most important aspects of the sculptor-artist-naturalist.

"In the relatively short period of barely a decade," Cosentino wrote, "this total craftsman started a studio, formulated a hard-paste porcelain, learned and mastered each step in a complicated process, produced sculpture that was artistically and technically desirable, and inspired other artisans with his techniques and standards of excellence—all without formal art education or even a prior basic knowledge of ceramics."

It is not known at just what point in his career in ceramics that the hand of destiny took over and began to steer him toward the birds, waterfowl, and other forms of wildlife that have made his works museum pieces and the most prized possessions of collectors around the world.

Perhaps it was in the latter part of 1959 when Boehm made his first bird-collecting safari to Kenya, Africa, that Boehm's life and works became governed by an inner force to create and preserve the beauty he found in birds and plant life.

During a stay of five weeks he collected 161 rare birds that were shipped to his growing aviaries. The African safari was the first of several expeditions Boehm made in search of rare birds. He later made other trips to Iceland, Ecuador and New Guinea. These aviaries filled with rare species of birds were class rooms for future works, after he had finished his birds of America. Unfortunately, they were works that would never be completed. The art world and collectors would have to be content with what he produced in a relatively short time.

Boehm's bird trapping safaris were exceptionally successful. One to Ecuador in early 1961 served to shed more light upon the man who is regarded as the ceramic genius of his time. On this expedition he gathered 63 rare and beautiful specimens of South American birds. As other wildlife workers have learned, the best way to get them home safely was to travel with them.

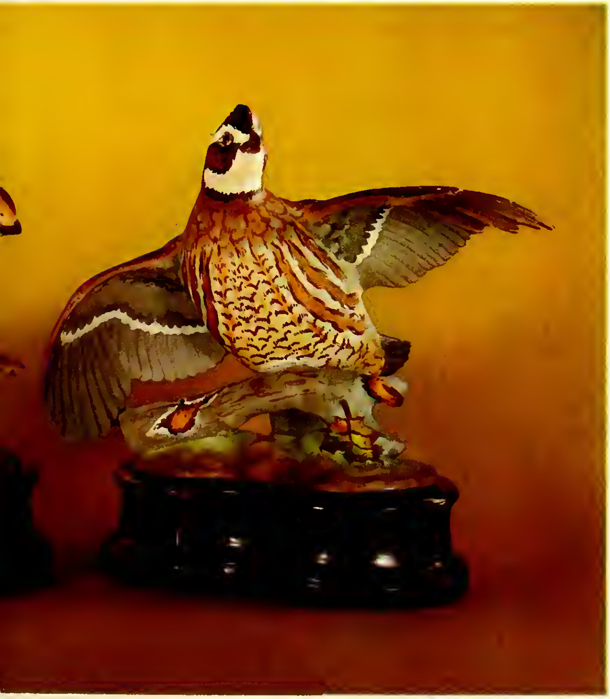
He would never allow his rare and beautiful birds to be placed in the cold, dark compartments of cargo planes. A good friend, Bernard Moos, who traveled with him on the Ecuadorian trip told the following story.

"The metropolitan airports were snowed in and we were rerouted to Boston. We were able to get a small room on an overnight train. But the room was extremely cold and drafty and Mr. Boehm was concerned about the safety of the precious cargo. He sent me looking for a couple of metal baskets while he rounded up all the scrap paper he could find. The conductor was bewildered by this unusual late-hour activity. We then locked the door and all the way to New York Mr. Boehm kept periodic small fires burning in the baskets in order to provide

RING-NECKED PHEASANTS, Limited Editi

as

BOB WHITE QUAIL, Limited Edition of 750 Replicas Completed 1965



heat for the birds. It almost suffocated us but he got all the birds to Trenton in good shape."

It is not inferred that prior to the 1960's Boehm had concentrated only on animals, dogs and decorative pieces. He had started birds and had reached Mallards by the middle of 1952 (Hallmark 406). Up to that time all birds had been glazed. The early bisque decorated birds began to appear in 1953. The first to be done in this natural finish were probably the Canada Geese.

Between 1953 and the end of 1955, introductions of new bird models accelerated. Boehm continued to create game birds, primarily: Bob White Quail, Canada Geese, Ring-necked Pheasants and Woodcock. The first important song birds were the Cardinals (Hallmark 415), followed by the Cedar Waxwings and Golden-crowned Kinglets.

With the Cardinals and Waxwings, design became freer, the bisque decorated finish for birds was adopted totally, and Boehm began to give importance in the compositions to the foliage settings.

This led to a burst of creativity in 1956 and early 1957. In those 13 months he completed the original models for Song Sparrows, Blacktailed Bantams, Carolina Wrens, Cerulean Warblers, Red-winged Blackbirds, Downy Woodpeckers and the American Eagle.

The work went on. Limited editions of California Quail, Meadowlark, Mourning Dove and Nonpareil Buntings appeared.

One is given a deeper insight into the artist when the 1962 collection was presented. It represented a movement away from the popular song birds to semi-popular and little known birds.

The Ptarmigans are the state bird of Alaska and not seen south of northern Canada; the Prairie Chickens are nearly extinct, and are not among the most beautiful American birds. The Blue Jays, although beautiful, have few friends among bird lovers.

It was obvious that markets were not a consideration with Boehm. He had entered a phase where he began to feel that the ornithological importance of portraying certain vanishing species such as Prairie Chickens with fidelity, and attractive but little known species such as Ptarmigans, was more important. That they are treasured today is not known to the artist.

One is reminded of the saying "carrying coal to Newcastle" when it is found that an important London exhibition of Boehm's works was scheduled for June, 1964. If it shocked Europe, it did not shock Boehm. Prior to his start in 1950, few, if any, American firms had ever made hard-paste porcelain sculpture that compared successfully with the centuries-old productions of Europe and Asia.

Boehm felt that something outstanding should be included in the collection going to London. It was decided to create one of the largest sculptures ever moulded in hard-paste porcelain. The subject selected was the supposedly extinct Ivory-billed Woodpeckers (See Louisiana Wildlife Museum, Louisiana Conservationist, Volume 22, Numbers 9 and 10.)

In his book on Boehm, Frank J. Cosentino wrote: ". . . Ivory-billed Woodpeckers whose wingspan measured up to twenty-seven inches across. The sketch showed the male bird in flight about to land on the top of a stump. He would be supported by a thick branch. Midway on the stump the female Woodpecker would be giving her attentions to a youngling whose head would protrude from its nest-hole. At the bottom of the stump a turtle would be straining its neck to see what the ruckus was all about. The piece would have to be completed in five months. Its estimated weight, when fired, would be a hundred pounds."

One can only guess at the endless work that took place to create the original sculpture and prepare the molds. Total weight of all the molds for the sculpture was approximately 3,000 pounds.

There was a preview showing of the collection, including the Ivory-billed Woodpeckers, at the Congressional Club in Washington. A further expression of the Club's pleasure and pride was its decision to send a gift of Boehm's work to Queen Elizabeth II thus marking the first exportation of American porcelain. A Mrs. Clifford Davis, President of the Congressional Club, selected the Robin and called it a "gift from all Americans."

COMMON TERN, Limited Edition of 500 Replicas

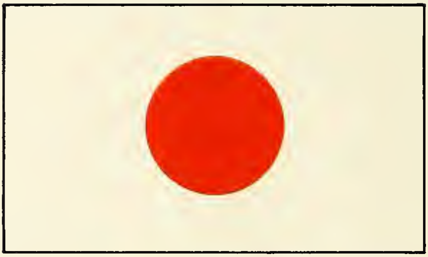
COSENTINO described Edward Marshall Boehm as a man of the future. "With all projects, including his art, his interest waned once the result was in sight . . . His thoughts and plans were far ahead of us, in many directions at once; and he was restless, impatient to begin new projects. In serious discussion with him, time after time he would say, 'There is so much I want to do; I only hope I'm given enough time to do it.' "

Boehm was flamboyant in his promises and overly-generous in giving gifts of his work. It was not uncommon for him to take a piece off display in the gallery and hand it to a youngster or friend.

He also had a tendency to give gifts not yet created. On occasions people would ask him to do a pet in porcelain. Without hesitation, Boehm might reply, "I'll make him for you," and proceed to do so. This would often occur at the most inopportune times, diverting his attentions and temporary halting the work of his key artisans. He always kept his word.

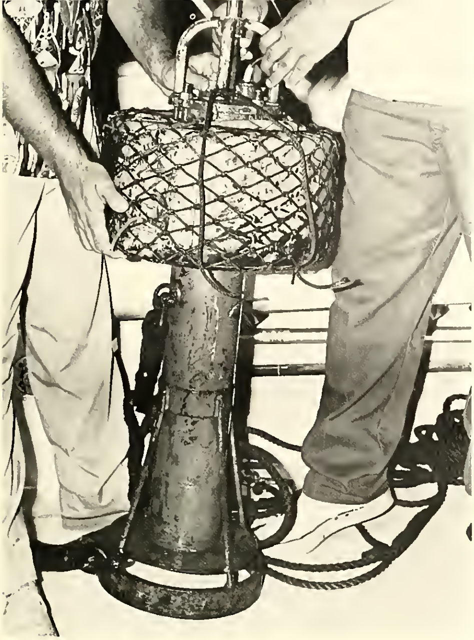
Time, the one gift he asked for, was not his lot.

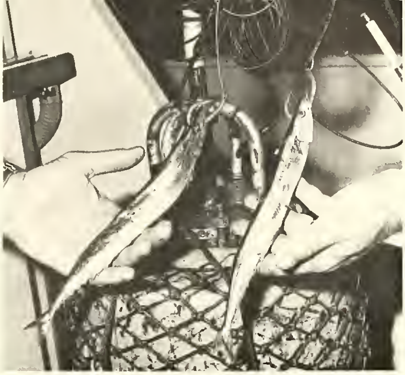
Editor's Note—Even though Edward Marshall Boehm's death was untimely and he passed away at the height of his creativity, limited editions of his works are issued with the original Trenton Hallmarks.



will they be back this year?

PAUL KALMAN





Opposite Page: Japanese Fishermen posed smilingly for New Orleans sportsman Sam Perino who made this close-up as marlin and tuna were being eviscerated before conveyor belt carried them into refrigerated holds. Piles of glass and plastic ball floats can be seen at left of photo. *Left:* Transistorized "Beeper" marks ends of the long line by sending out radio signals which can be picked up aboard another ship. This equipment, bearing the name of a well known Japanese radio manufacturer, is powered by a motorcycle battery. *Above:* Special Hooks baited with "Cigar Fish" are designed to be ingested into the throat or stomach, hopelessly eliminating the fishes' chances for escape.

PHOTOS BY PAUL KALMAN

In 1965, the Louisiana Wild Life and Fisheries Commission and the New Orleans Big Game Fishing Club initiated a continuing program of biological studies involving the major species of large pelagic fishes taken in the Gulf of Mexico offshore from South Pass of the Mississippi River.

In addition to measuring and examining the stomach contents of fish brought in for weighing, biologists stationed at the tiny village of Port Eads keep accurate records on the marlin, tuna and other fish which anglers catch and subsequently release.

During a normal Summer, South Pass can be expected to produce anywhere from 60 to 125 blue marlin, 200 or more white marlin, about 50 sailfish, and at least 600 yellowfin tuna averaging 100 pounds and weighing upwards of 150.

Half of the 1969 season was lost as a result of Hurricane Camille. Because of adverse current conditions, the 1968 season was considered an "off year" but, even so, 76 blue marlin were officially recorded along with 195 white marlin, 37 sailfish, and approximately 250 tuna.

In contrast, only a dozen blue marlin were tabulated during the 1970 season which ended last October. Equally disappointing was the remainder of the seasonal catch consisting of nine white marlin, 13 sailfish, and 30 yellow tuna. The latter averaged less than 50 pounds.

Although the evidence for doing so is purely circumstantial, it is generally conceded that this dramatic decline can be traced to the presence of commercial fishing vessels which moved into the northern Gulf last July and systematically raped Louisiana's fabulously fertile offshore waters for at least two months before they picked up their fearfully efficient "long lines" and sailed home to Japan.

The first of the grimy white ships was spotted by a group of sport fishermen who mistook the Zenko Maru No. 12 for a merchant vessel, one of the hundreds of such steamships passing through the area each year on their way to or from the Port of New Orleans.

Only when they steered the "Bonnie Blue" in for a closer look did William J. Willkomm, Sam Gonzales, and Captain Lon Boudreaux properly identify the unmistakable signs of the dreaded

PHOTO BY SAM PERINO

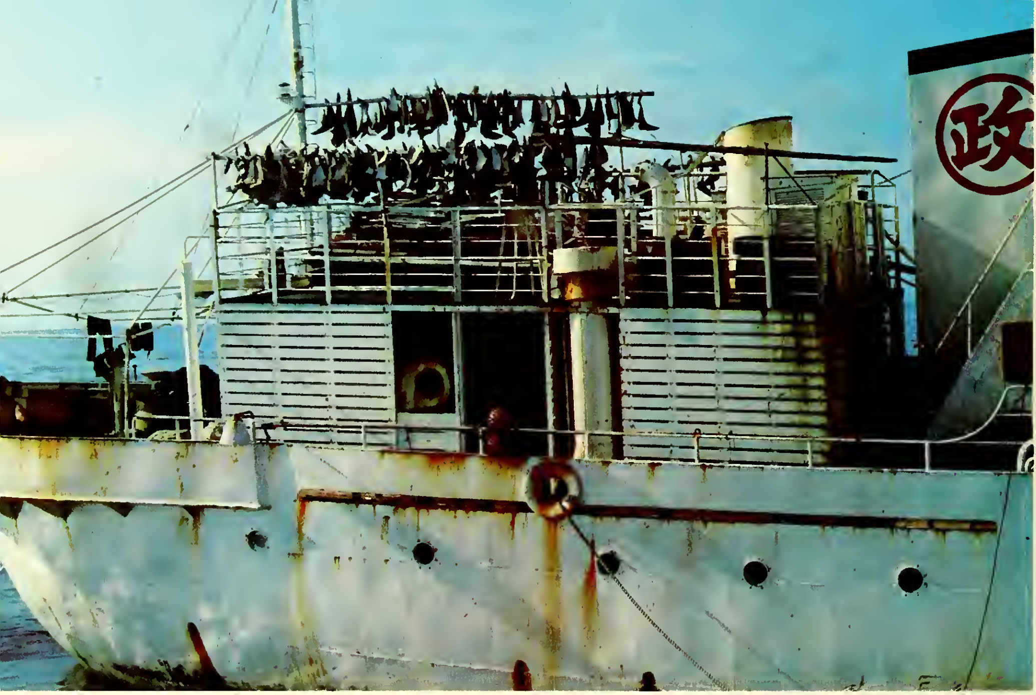


PHOTO BY PAUL KALMAN

long liners: stretched between the superstructure and afterdeck was a series of wire cables strung with hundreds of fish bills and tails, grisly reminders of the many fine game fish whose butchered carcasses were stowed in refrigerated holds for shipment to Japan.

Up forward, crewmen stripped to the waist were working knee deep in small mountains of blue marlin, white marlin, yellowfin tuna, sailfish, broadbill swordfish, and half a dozen varieties of sharks including the rare and prized Mako. Blood pouring from the scuppers in steady streams attracted small sharks that tore up the surface fighting for scraps of refuse being washed overboard.

Circling the floating abbatoir at a respectful distance, Willkomm and Gonzales took pictures before Captain Boudreaux headed back to port.

"We were too sick to continue fishing," Gonzales later related.

Several weeks of squally weather put a temporary end to sport fishing but had little effect on the long liners. No one saw Zenko Maru No. 12 during this time but there is ample reason to believe that she and several sister ships stayed on station and never stopped working their lines.

In mid-August during the annual Empire-South Pass Fishing Rodeo, several groups of sport fishermen reported encounters with the Japanese. One group headed by New Orleans architect August Perez III spotted a long liner half again as big as Zenko Maru No. 12. It too was strung with the same festoons of bills and tails and was surrounded by a sea of blood.

Fishing nearby, Dr. James W. Burks, Sam Perino and Captain Wes King stumbled across a similar 400-footer with a smaller tender moored alongside.

"They had just finished cleaning the catch when we got there," Dr. Burks explained, "because only a few marlin were on the conveyors and the men were hosing down the decks. However, they must have been quite busy before our arrival since crewmen were hanging scores of bills and tails on those big clotheslines."

Perino climbed into the tuna tower and made the excellent closeups which illustrate this article.

Except for those taken by the long liners, only a handful of marlin and tuna were caught or even seen during the Empire-South Pass Rodeo, underlining the fear that big game fishing at the mouth of the river was destined for oblivion if the Japa-

Opposite Page: Dozens of gamefish bills and tails hang in the sun to dry before being sent to Japan where they are used for making soup. Grisly "clotheslines" like these are standard characteristics on longline vessels.

Below: Liberated longline gear is displayed by a group of South Louisiana anglers who encountered the deadly Japanese gear only 40 miles from Louisiana coast. Identity of the sportsmen is witheld at their request.

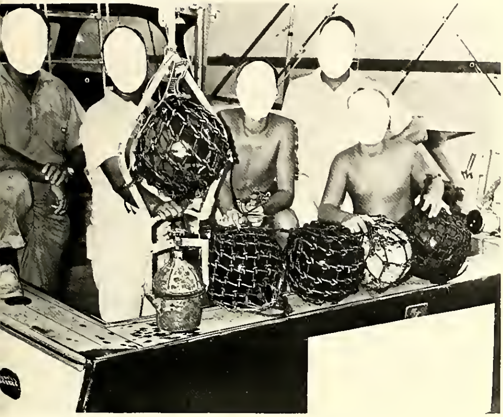


PHOTO BY PAUL KALMAN

nese continued their deadly work.

Hanging like a shroud over the big game fishing scene at the outset of the 1971 season is the ominous question:

"Will they be back this year?"

The paradox of South Pass is that one of the world's most promising big game fishing hotspots is in imminent danger of being destroyed by the same diabolical device that led to its discovery.

Few people even thought about big game fishing in Louisiana's coastal waters prior to 1951 when the U. S. Interior Department sent its research vessel "Oregon" into the area to conduct a series of experimental cruises. Outfitted primarily for shrimp trawling, the "Oregon" also carried a modest supply of long line gear which project director Harvey R. Bullis, Jr. had obtained from sources in Japan. Government scientists hoped that Louisiana and Mississippi labels would someday appear on tuna bought by American housewives but this didn't materialize because the Japanese could catch, process, and ship tuna into this country much cheaper than it could be done on the Gulf Coast.

Nevertheless, "Oregon" and her long lines proved beyond doubt that tuna, marlin and the other prized big game species could be caught in quantity surprisingly close to the delta. On one 14-day voyage, "Oregon" returned to Pascagoula with 652 tuna in her hold. The fish weighed up to 215 pounds with the entire catch scaling 29-1/2 tons. In addition to yellowfins, the long lines brought up 27 blackfin tuna, 10 sailfish, 78 white marlin, one blue marlin, two broadbill swordfish, and 178 sharks.

Encouraged by reports of the "Oregon's" activities, this writer called together some friends in 1956 and organized an expedition to South Pass where we produced the first marlin and tuna ever taken from Louisiana waters on rod and reel.

Although they could have been there earlier, foreign long liners were first seen off South Pass in 1967 when several Cuban vessels made a brief incursion. They were apparently discouraged after undergoing a few days of surveillance flights by patrol aircraft ordered out by Rear Admiral James D. Craik, commandant of the Eighth Coast Guard District.

Distance appears to mean nothing to the Japanese whose long line ships have extended their operations over all the productive tropical and sub-tropical waters of the world. They introduced the process to the Atlantic in 1955 and, by 1962, the Japanese Fishery Agency issued a report listing that year's long line catch from the Atlantic alone as consisting of 52,000 giant bluefin tuna (average weight 450 pounds), 19,000 swordfish, 111,000 white marlin, 117,000 blue marlin and 67,000 sailfish taken in 18,200 man days of fishing. A 1966 report issued by the Woods Hole Oceanographic Institution indicated that Japanese vessels working the Caribbean and Gulf of Mexico were catching upwards of 200 blue marlin, 250 white marlin, and 350 bluefin tuna *in a single day.*

Frank Mather, director of Woods Hole, was moved to comment: "These figures have not touched on the landings of albacore, yellowfin, and bigeye tunas which are the mainstay of the Japanese long line fishery since these are, at present, of little importance as game fish in these areas. It may be expected, however, that as the stocks of these three species are reduced, there will be greater pressure on the others (marlins and bluefins), and there are strong indications this is already taking place."

How quickly the long lines can deplete an area of game fish has been demonstrated time and again by the Japanese and other foreign nations. For years, the waters surrounding New Zealand were reputed to be the world's best for marlin fishing, with more than 1,300 billfish being caught on rod and reel in 1949.

In 1965, after the Japanese had decimated the area and moved to greener pastures, less than 100 marlin were taken by sport fishermen.

In Venezuela, a single Japanese long liner caught 1,500 billfish in one 24-hour period, with 90 percent being white marlin.

Early last year, the long liners struck in Puerto Rico, producing a 50 percent drop in the expected catch of the San Juan Blue Marlin Tournament.

The Zenko Maru fleet operating off South Pass last year consisted of a giant mother ship serving as headquarters for six smaller vessels. Each vessel, including the mother ship, was staffed and outfitted to fish several lines which were usually put out in the early evening and picked up the following day.

Long lines vary in length with the average being 30 miles.

To facilitate handling, the "main line" is divided into 350-foot sections called "baskets." Vertical buoy lines attached to glass or plastic floats suspend the main line underwater at depths of 10 to 20 fathoms. The hooks are hung from three-fathom "branch lines" consisting of lengths of tarred dacron line attached to heavy cable leaders.
line attached to heavy cable leaders.

The hooks used by long-liners (see illustration) are specially designed to be swallowed into the throat or stomach, making them almost impossible to dislodge. They are baited with almost anything that is readily available including mullet, cigar fish, ballyhoo, and herring.

The branch lines (with hooks) are spaced about every 15 fathoms with a float or buoy at intervals of 150 fathoms along the main line. In addition, the Japanese attach small battery-powered radio transmitters with fiberglass antennas to assist in locating the ends of the lines.

Aboard ship, the operation is a marvel of efficiency and mechanization. One of the few chores done by hand is the baiting of hooks. The heavy lines are paid out and retrieved on motorized reels feeding into other devices which automatically coil the lines into plastic tubs.

As fish are brought to the surface, crewmen lean overside and impale them on giant gaff hooks. The bigger marlin and tuna are hoisted aboard with power blocks and beaten senseless before the butchers go to work with their knives, saws and cleavers.

As noted earlier, the prime objective is tuna but the Japanese are frugal people and throw back nothing. Even sharks are considered a valuable by-product. Marlin are shipped intact to Japan for manufacture into fish sausage (a Japanese delicacy that fetches a fancy price) or consumed raw with horseradish and soy sauce in a dish called "Sashimi".

Not all long liners operating in the Gulf of Mexico are Japanese or Cuban. In 1969 and 1970, the commercial boat "Gulf Stream" came all the way to South Pass from her home port in Maine and harvested 155,000 pounds of broadbill swordfish. Later the same year, the "Harry Glen" out of Montauk, New York was spotted fishing in the same area.

The reaction of sportsmen to the presence of long liners isn't always passive. A few years ago, outraged charter boatmen in Baja California brandished their shark rifles when they discovered a long liner with 225 striped marlin aboard. The intruder wisely decided to strike his colors and head for the horizon before the shooing started. Another Japanese vessel with 300 Pacific sailfish aboard was apprhended, brought to port, and fined for fishing in Mexico's territorial waters. In Panama, the government used to send fighter planes aloft to shoo long liners away from the prolific black marlin fishing grounds near Pines Bay. Today, these waters are largely ignored by the Japanese.

Louisiana sportsmen stop short of open confrontation but many think nothing of "liberating" the attractive glass floats and bringing them home as decorative "trophies of war" for their patios and dens. Fearful that the long liners might retaliate by booby-trapping the floats, some anglers have taken to shooting the balls in a unique game called "ocean skeet".

The Sport Fishing Institute, a non-profit conservation organization sponsored by major fishing tackle manufacturers, discourages such actions, saying that violence can lead only to greater hardship. The Institute adds that the Japanese will cooperate if they are approached in the proper way.

R. H. Stroud, executive director of the Institute, has established an informal, non-government agreement with Japanese commercial fishing representatives who have pledged to keep their boats sufficiently well away from important sport

Blue Marlin weighing 377 pounds, caught by the author, Paul Kalman, was one of only a dozen such fish taken out of South Pass last year. The normal year's catch ranges from 75 to 125 blue marlin. Sports anglers blame the decline on longline operations.

PHOTO BY PAUL KALMAN

fishing centers and avoid fishing deliberately for billfish in competition with sportsmen. On the other hand, says Mr. Stroud, sportsmen must begin showing good faith by stopping the substantial harassment of Japanese boats and destroying the floats, lines and other gear. The Sport Fishing Institute asks sportsmen to submit notarized statements citing complete details of any Japanese long line operations they might come upon, and to support such documents with photographs. He warns, however, that the quickest way to end such negotiations is for American sportsmen to "liberate" the long liners' tackle.

From the viewpoint of legality, the Japanese (or any other nation) are free to fish anywhere they please so long as they come no closer than 12 miles from our shores. It is important to note that this 12-mile limit applies only to fishing. The so-called "territorial limit" is only three miles.

All efforts to lessen either fishing or territorial limits have been rebuked by the State Department which explains that the U. S. would jeopardize its own freedom of passage in more than 100 areas of the world where narrow straits and passes are often traversed by U.S. naval vessels.

In contrast, seven South American and Latin American nations and Korea claim jurisdiction over "maritime zones" extending 200 miles from their shores. All say this is done to protect their fisheries.

Confusing the issue even further are the long-range biological effects of over-fishing the oceans. Everybody agrees that long lining exacts its deadly toll in a very brief time but nobody is equipped to say how many months or years are needed for the offended resource to recover.

As Frank Mather sees it: "Even if it (long line fishing) does not deplete the local supply of fish excessively, it may so disturb the fish that they move away or alter their behavior in such a way as to reduce their availability to sports methods."

Editor's Note—Paul Kalman, author of Will They Be Back This Year, is a New Orleans big game fisherman who was one of the pioneers of fishing billfish and other big game fish out of South Pass. Kalman who is shown with one of a numerous blue marlin he has taken in these waters is a frequent contributor to national outdoor magazines and a past president of the Louisiana Outdoor Writers Association.

Nº40

the Custom Knife Maker... craftsman in steel

Story and Photography By Lionel W. Treadaway

Amid the hustle and bustle of today's age of mass production, a truly hand crafted article is almost as much a rarity as the artisan who painstakingly produced it. The term "dying art" is being applied to more and more occupations today than ever before in our history and although mass production methods lessen time and cost, what we fail to realize in most instances is that these methods invariably lessen quality.

Fortunately enough there are still a very few crafts which do not hold true to this rule, one of these being the art of custom knife making.

The popularity of this art in America can be traced primarily to one man, Jim Bowie. Already famous for his prowess in the Vidalia Sandbar Fight, Bowie placed an order with a certain James Black of Washington, Arkansas. Black, noted for his reputation as one of the better blacksmiths of his time, soon produced what Bowie wanted. Shortly after accepting Black's creation, Bowie was accosted by three highwaymen, all of whom fell victim to his new knife. As word of the incident spread, Black was stifled with orders for a knife "just like Bowie's". The era of the custom made knife had begun.

By looking back a mere thirty years ago, one would see that there were less than ten men engaged in turning out first quality custom made knives in this country. Today there are upwards of 50 individuals whose full-time work in this field, can without reservation be called superb. Added to this number are hundreds of part time knife makers who practice their trade simply because of the sense of accomplishment which it gives them.

There are more men turning out hand made knives today than ever before in our country's history and it is a simple statement of fact that the finest knives the world has ever seen are being made in the United States today.

As we all know, anyone can walk into a sporting goods store today and, for $10, walk out with a serviceable knife. Why is it then that the more serious outdoorsmen pay $30, $40 or more for a knife that is custom-made? What could be so special about a hand made knife that would justify that type of cash outlay?

Custom knife makers such as Peter J. "Pete" Callan of Waggaman and Raymond A. Busch, Jr., of Metairie, are quick to answer these questions.

"The experienced hunter," says Callan, "will readily admit that a good knife is second only to his rifle. I've been making knives for more than 25 years, not for the money, but for the sheer sense of pleasure I get from creating something with my own hands. When you get right down to it, it's like a link with the outdoors. When I can't go fishing or hunting, I can make my knives."

"I've used both custom knives and the mass produced ones and there's just no comparison," states Busch. "The custom knife outlasts and out performs the other hands down. The materials are all top quality. You can't settle for anything less when your name goes on it."

"A custom knife is made sharp and with a minimum of care it will stay sharp and last a lifetime," said Callan. "Some of my best customers are trappers and professional guides. They're not rich by any means but they know what's best for their line of work. Take a custom made knife into the field. You'll see what I mean."

The boom in the hand made knife field can be attributed in part to an increasing awareness that a knife can be a precision cutting instrument and at the same time a work of major artistic importance. For these reasons, fine knives are among the few items in our "production line society", which must be fashioned by hand in the same basic manner as they have been for centuries past. This factor alone, sharply limits the number that any one man can produce and it is this limited production that causes the demand to far exceed the supply.

The men who turn out these custom made knives may be divided into two separate groups. The knife smiths who favor forging their blades with hammer and anvil and the knife makers, such as Callan and Busch who use the metal removal method with grinding wheels to bring their blades to the desired size and shape. Either method will result in an excellent knife when the work is done by a skilled craftsman.

Whether they are to be used by a knife smith or a knife maker, the component parts of a custom knife are the same. The blades are made from one of two types of steel, high carbon tool steel which contains .90 percent or more carbon, or alloy tool steel such as stainless. The more favored handle materials include rosewood, an even grained wood which ranges from purple to dark brown in color and takes an extremely high polish; coco bolo, an extremely hard wood with orange and red streaks; Indian sambar stag, which is ideal as it does not have a hollow core and Micarta, a virtually indestructible laminate of phenolic resin and fabric. The spacers which join the handle to the butt cap on one end and to the finger guard on the other, can be made of any number of materials. Those most commonly used for this purpose are of either brass, copper, formica or sheet fiber. The butt caps and finger guards themselves are usually of steel, brass, bronze or German silver.

With these materials readily at hand in his workshop the knife maker's next step is to select a design. The true meaning of craftsman becomes apparent as the harsh shapes of steel, wood and brass begin to take on the superbly flowing lines and angles inherent in the custom made knife.

He begins by making a full size drawing of the blade on cardboard. The cardboard cutout is then traced onto the bar of flat steel which ranges in thickness from 3/16 to 3/8 of an inch, depending on the type of blade being crafted.

Cutting the blade outline from the steel bar can be accomplished with either a hacksaw or band saw. Once the outline is obtained, the cutting edge and point are rough ground on a stone wheel.

The next step is the removal of cuts and scratches made on the blade by the grind stone. A hand file is used initially for the deepest cuts and a turn at the buffing wheel gives the blade a more polished look.

He is now ready to shape and thread the tang, which is that part of the steel behind the blade that fits through the handle. Cutting threads on the tang enables the maker to screw the butt cap onto the solid piece of steel which also anchors the handle more firmly in place.

6.

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1. The initial step is to trace the knife's pattern onto a bar of flat steel. 2. A band saw is used to cut the knife's rough outline into the steel. 3. After the steel has been heated to the proper temperature it is plunged into an oil bath and allowed to cool. 4 Another turn on the grinding wheel removes the scale caused in tempering. 5. The guard is silver-soldered to the blade before work on the handle is begun. 6. The finished knives created by Callan and Busch.

The heat treatment or tempering process which follows is the most crucial period in custom knife making. It is now that the practiced eye of the true craftsman shows its worth. The blade must be evenly heated to a cherry red in the forge or tempering furnace. If the temperature goes below 1400°F., the blade, not adequately heated, will remain soft and will not hold a good edge. If on the other hand the temperature ranges above 1450°F., the result will be a brittle blade that will break at a sharp blow. Once the blade has reached the cherry red state it is immediately plunged into a mixture of linseed oil and motor oil which cools and hardens the steel.

After the initial heat treatment the steel is again repolished, before being placed back in the furnace for a second time. This second heating is considerably milder than the first. The forge temperature is kept between 350°and 400°F., and actually softens the steel somewhat, drawing the temper. More polishing to remove cuts and scratches and the blade is laid aside to permit work to be done on the handle.

A slot must first be cut in the finger guard to enable it to fit snugly over the tang. The guard must then be silver soldered to prevent moisture from entering between the blade and handle and also to insure a tight fit. Spacers are then cut and fitted in the same manner.

The handle is drilled and fitted, redrilled and refitted until a satisfactory fitting is achieved. The spacers and handle are then anchored in place with a cement-like epoxy glue. As an added precaution a metal clamp or butt cap is attached through and behind the handle to the tang.

After allowing the epoxy to set for at least 24 hours the handle and spacers are shaped to the desired dimensions with a variety of files and wood rasps. The handle and blade are again hand sanded and buffed with a jewelers compound, until a mirror like finish is obtained.

Approximately twenty hours later the finished product is displayed. From the hard rough lines of the raw materials which were first viewed, to the almost unbelievable smoothness of the finished knife.

". . . You can't settle for anything less when your name goes on it."

PHOTOS BY LIONEL W. TREADAWAY

SUPER BASS

IT IS VERY POSSIBLE that Louisiana fresh water lakes and streams could be producing 14, 15 and up to 20 pound bass within the next decade.

The Louisiana Wild Life and Fisheries Commission is in the process of conducting a cooperative research project comparing the native Louisiana largemouth bass with its larger sized Florida sub-species commonly called the "Super Bass".

"The purpose of the project is to carefully screen the new species before open releases are made", stated Gutherie Perry, Jr., Fishery Biologist. "A haphazardly introduced new specie could possibly destroy or alter our delicate balance of nature. In an aquatic environment this would involve your predator-prey relationships or food chain cycles, as in a bass-bluegill pond. We are not only concerned with the possibility of disrupting existing balances, but the introduction of new diseases or parasites has to be considered. Also introduction on a scale large enough to fill the request of pond owners and maintenance of brood stock could be tremendously expensive, time consuming, and possibly not justifiable," added Perry.

For these reasons fry and fingerling bass were flown to Louisiana from the Richloom Fish Hatchery, Webster, Florida on April 30. They were placed in research ponds at the LaCombe Fish Hatchery, Rockefeller Wildlife Refuge and Louisiana State University.

The Fish and Game Division has devoted a 1.8 acre pond to the study. Equal numbers of Florida and Louisiana bass have been marked and stocked in the pond. Bluegill sunfish are being stocked as a forage specie following the commonly accepted bass-bluegill stocking ratio of ten bluegill for each bass. From this pond it is hoped to compare growth rates, inbreeding characteristics that intergrades possess it inbreeding is present, percent survival, catchability, production and dominance. Morphlogical differences between the two will be examined, with conditions in this area closely resembling the native habitat of the fish because of warm artesian water.

The Refuge Division has involved seven ponds in the project at the Rockefeller Wildlife Refuge, Grand Chenier, Louisiana bluegill and Louisiana bass have been stocked in three ponds and bluegill and Florida bass in three others, using the standard stocking ratio. An additional one-third acre pond is being used to hold surplus Florida bass.

Louisiana State University is using four ponds for the study. Two will be stocked with Louisiana bass-bluegill and two with Florida bass-bluegill. The objectives in Baton Rouge will be essentially the same as those at Rockefeller with the exception of salinity.

The study has been spread over three distinctly different habitats which will also lessen the threat of losing the study to hurricanes or the like.

BACK COVERS BY BOB DENNIE